Name:

at1113exam: Expand, factor, and solve quadratics (v323)

1. Solve the equation.

$$(3x - 4)(2x - 5) = 0$$

$x = \frac{4}{3}$ $x = \frac{5}{2}$

2. Expand the following expression into standard form.

$$(5x + 7)(5x - 7)$$

$25x^2 - 35x + 35x - 49$

$25x^2 - 49$

3. Expand the following expression into standard form.

$$(7x - 5)^2$$

$49x^2 - 35x - 35x + 25$

$49x^2 - 70x + 25$

4. Expand the following expression into standard form.

$$(5x + 3)(6x - 7)$$

$30x^2 - 35x + 18x - 21$

$30x^2 - 17x - 21$

5. Factor the expression.

$$36x^2 - 25$$

$$(6x - 5)(6x + 5)$$

6. Solve the equation.

$$6x^2 - 18x + 49 \;=\; 4x^2 + 3x - 5$$

$$2x^2 - 21x + 54 = 0$$
$$(2x - 9)(x - 6) = 0$$
$$x = \frac{9}{2} \qquad x = 6$$

7. Factor the expression.

$$x^2 - x - 56$$

$$(x - 8)(x + 7)$$

8. Solve the equation with factoring by grouping.

$$12x^2 + 18x + 10x + 15 \;=\; 0$$

$$(6x + 5)(2x + 3) = 0$$
$$x = \frac{-5}{6} \qquad x = \frac{-3}{2}$$